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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/074,293

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EXAMINER

ANDUJAR, LEONARDO

ART UNIT

PAPER NUMBER

2826

NOTIFICATION DATE

DELIVERY MODE

12/10/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/074,293	<b>Applicant(s)</b> CONTOPANAGOS ET AL.	
	<b>Examiner</b> Leonardo Andújar	<b>Art Unit</b> 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 7/08/2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 5, 8, 12-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7 and 9-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

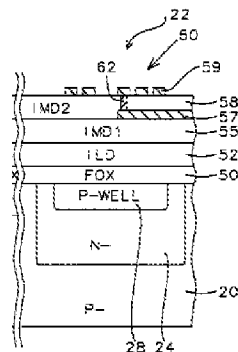
1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 3, 6, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhu et al. (US 6,133,079).

3. Regarding claim 1, Zhu (e.g. fig. 4) teaches an on-chip inductor consisting of: at least one dielectric layer (52, 55, 58); at least one conductive winding 59 on the at least one dielectric layer; and P-well 28 having a major surface parallel to a major surface of the dielectric layer.



4. Regarding claim 2, Zhu teaches a field oxide (FOX) having a major surface that is juxtaposed to the major surface of the P well.

5. Regarding claim 3, Zhu teaches that the at least one dielectric layer include one layer and the at least one conductive winding including a spiral winding on the one layer.

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6. Regarding claim 6, Zhu teaches a substrate 20 having a major surface parallel to the major surface of the at least one dielectric layer.

7. Regarding claim 9, Zhu (e.g. fig. 4) teaches an on-chip inductor consisting of: at least one dielectric layer (52, 55, 58); at least one conductive winding 59 on the at least one dielectric layer; and field oxide layer (FOX) having a major surface parallel to a major surface of the dielectric layer.

8. Regarding claim 10, Zhu (e.g. fig. 4) teaches P well 28 having a major surface that is juxtaposed to the major surface of the field oxide layer.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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11. Claims 4, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu et al. (US 6,133,079). In view of Merrill et al. (US 5,610,433)

12. Regarding claim 4, Zhu (e.g. fig. 4) teaches that the at least one dielectric layer includes a plurality of layers (52, 55, 58) but does not show that the at the at least conductive winding 59 includes a plurality of windings on the plurality of layers. However, Merrill (e.g. figs. 1 and 2) teaches multi winding inductor on different levels of the insulating material. The Q factor of the inductor can be increased by including several winding (abstract). In general, inductors having a high Q-factor dissipate less power and thus improve the achievable gain. Further, high Q inductors allow an oscillating circuit to perform with minimal power injection from the driving transistor and hence minimize noise. It would have been obvious to one having ordinary skills in the art to include a plurality of windings on the plurality of layers in the inductor disclosed by Zhu as taught by Merrill to increase the Q factor of the inductor for the benefit of minimizing noise.

13. Regarding claims 7 and 11, Zhu (e.g. fig. 4) does not show that the at the at least conductive winding 59 includes a plurality of windings. However, Merrill (e.g. figs. 1 and 2) teaches multi winding inductor wherein the windings are magnetically coupled. The Q factor of the inductor can be increased by including several winding (abstract). In general, inductors having a high Q-factor dissipate less power and thus improve the achievable gain. Further, high Q inductors allow an oscillating circuit to perform with minimal power injection from the driving transistor and hence minimize noise. It would have been obvious to one having ordinary skills in the art to include a secondary

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winding magnetically coupled to the conductive winding of the inductor disclosed by Zhu as suggested by Merrill to increase the Q factor of the inductor for the benefit of minimizing noise.

### ***Response to Arguments***

14. Applicant's arguments filed 7/08/2009 have been fully considered but they are not persuasive. Applicant argues that since claim 1 includes the transitional phrase "consisting of" the claim excludes elements other than the at least one dielectric layer, the at least one conductive winding, and the P-well; Zhu's inductor, which includes more elements (as listed above) than that of claim 1, does not anticipate the inductor of claim 1. This is not found persuasive because the claim recites "at least one dielectric layer" and "at least one conductor layer". In this case, the claim may contain more than one dielectric layer and more than one conductive layer but not other and distinct additional elements. For example, claim 4 which "further limit" claim 1 recites that the at least one dielectric layer include a plurality of layers; and the at least conductive winding as to include a plurality of windings on the plurality of layers. Additionally, claim 2 further include other elements such as a field oxide. In this case the prior art is consistent since the FOX is indeed an insulating layer. The examiner respectfully notes that if this interpretation is incorrect then any dependent claim adding additional elements to the parent claim will be inconsistent with the 35 U.S.C. 112, fourth paragraph. These claims would be rejected under 35 U.S.C. 112, fourth paragraph, as being (an) improper dependent claim(s) for failing to include every limitation of the claim(s) from which it depends. In this case, applicant would be required to cancel or amend the claim to

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place the claim in proper dependent form, or to rewrite the claim in independent form. In other words, if a dependent claim can be infringed but not the parent claim the claim does not meet the 35 U.S.C. 112, fourth paragraph

### ***Conclusion***

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonardo Andújar whose telephone number is 571-272-1912. The examiner can normally be reached on Mon through Thu from 9:00 AM to 7:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leonardo Andújar/  
Primary Examiner, Art Unit 2826